

WE CLAIM:

1. A composite surgical implant comprising a planar sheet of a thermoplastic resin having a top surface and a bottom surface, and a surgical grade metal mesh contained therein, and said implant is able to be bent or displaced by manipulation by hand, wherein upon the displacement of said implant, said implant will generally maintain the shape to which it has been displaced.
2. The implant recited in claim 1 wherein said metal comprises titanium.
3. The implant recited in claim 1 wherein said top surface further comprises a smooth barrier surface.
4. The implant recited in claim 3, wherein said bottom surface comprises a smooth barrier surface.
5. The implant recited in claim 3 wherein said bottom surface comprises a porous surface.
6. The implant recited in claim 5 wherein the pores of said porous surface are sized to allow for fibrovascular ingrowth.
7. The implant as recited in claim 1 wherein said thermoplastic resin comprises polyethylene.
8. The implant as recited in claim 5 wherein said porous surface comprising high density polyethylene.
9. The implant as recited in claim 1, further comprising porous surfaces to allow for fibrovascular ingrowth.
10. The implant recited in claim 1 further comprising means for attachment to bone.

11. The implant as recited in claim 9 wherein said means comprise openings in said mesh that will receive and engage the head of a surgical screw or surgical bone anchor.

12. A method of making a surgical implant comprising
placing a metallic mesh material in the bottom of a mold
introducing thermoplastic resin fines into said receptacle to allow
said fines to fill the bottom of said mold and the interstitial spaces of the said
mesh,
placing a sheet of thermoplastic resin over said fines and said
mesh,
placing a mold top over said sheet and applying heat and pressure
to said components contained in said mold to allow said fines to partially melt and
to fuse to one another whereby an implant is constructed having a smooth barrier
surface and an opposite porous surface.

13. The method of making an implant as recited in claim wherein said
first step comprises placing a thin sheet on the bottom surface of the cavity of said
mold, whereby the implant created comprises barriers on opposite sides of said
mesh.

14. A method of reconstruction of a bone defect comprising, bending a
surgical implant having a top and bottom surface comprised of thermoplastic resin
and a metallic mesh contained therein to conform to the profile of said defect, and
mechanically attaching said implant to bone in proximity with said defect.

15. The method of reconstruction recited in claim 14 wherein said defect
is in a human

16. The method of reconstruction recited in claim 14 wherein said defect
is on the cranium.

17. The method of reconstruction recited in claim 14 wherein said defect is in the orbit.

18. The method of reconstruction recited in claim 17 wherein said implant further comprises a top smooth barrier surface and a bottom porous surface and said implant is positioned in said orbit with said top smooth barrier surface oriented toward the orbital void.

19. The method of reconstruction as recited in claim 14 wherein said securing step comprises introduction of mechanical fasteners through said mesh of said implant and into said bone tissue.

20. The method of reconstruction as recited in claim 19 wherein said mechanical fasteners comprise surgical screws.

21. The method of reconstruction recited in claim 14 further comprising a step of cutting said implant to conform to the shape of said defect.